UNITED STATES DISTRICT COURT

DISTRICT OF MINNESOTA

PICTOMETRY INTERNATIONAL CORPORATION,

Civil No. 11-1423 (JRT/LIB)

Plaintiff,

v.

MEMORANDUM OPINION AND ORDER CONSTRUING CLAIM TERMS

GEOSPAN CORPORATION**,**

Defendant.

Joseph P. Titterington, Marc A. Brockhaus, D. Ward Hobson, and Douglas J. Sorocco, **DUNLAP CODDING, P.C.**, 1601 Northwest Expressway, Suite 1000, Oklahoma City, OK 73118; and Rachel K. Zimmerman, **MERCHANT & GOULD PC**, 80 South Eighth Street, Suite 3200, Minneapolis, MN 55402, for plaintiff.

Kurt J. Niederluecke and Grant D. Fairbairn, **FREDRIKSON & BYRON, PA**, 200 South Sixth Street, Suite 4000, Minneapolis, MN 55402, for defendant.

This is a patent case between two providers of aerial photography services. Plaintiff Pictometry International Corporation ("Pictometry") owns a patent directed to creating a map from images. In its Complaint, Pictometry asserts defendant GEOSPAN Corporation ("GEOSPAN") infringed this patent. GEOSPAN has counterclaimed for declaratory judgment of non-infringement and patent invalidity. The matter is before the Court on the parties' joint motion to construe claim terms contained in Claims 1 and 16.

BACKGROUND

Pictometry is a provider of specialized aerial photography services. (Compl. ¶ 3, Oct. 13, 2009, Docket No. 1.) GEOSPAN provides similar services "which are

competitive" with Pictometry's services.[1] (*Id.* ¶ 4.) Both companies engage in photogrammetry, the science of making accurate measurements through the use of photographs. The photographs may be taken from overhead (satellites, airplanes) or from the ground and from a variety of perspectives (including from the side, from directly overhead, or from overhead at an oblique angle).

Pictometry claims that U.S. Patent No. 5,247,356 (filed Feb. 14, 1992) covers a method and apparatus that "enable the user to accurately determine the geographic location of a pixel in an image and thereby to calculate, *inter alia*, the height and width of a building or the dimensions of a parcel of land." (*Id.* at 7.) GEOSPAN's product, GeoVista, allows a user to measure ground features from aerial photographs. (*See id.* at 8.)

The patent describes a method and apparatus that enable a user to generate electronic images of overlapping portions of land and calculate the geographic coordinates of the corners of each image making up the strip. *See* '356 Patent, Abstract. The patent describes one method for calculating the geographic coordinates of the corners of each image. First, a camera in a vehicle takes an initial picture containing a stationary object. *See* '365 Patent, col.1, l.55-59. The latitude and longitude of each corner of the first image is determined, *id.* col.1, l.59-60; col.3, l.9-12, and the position of the stationary object to each corner is determined, *id*, col.1, l.61-65; col.3, l.57-62. The

[1] GEOSPAN previously sued Pictometry for infringement of its patent. *See GEOSPAN Corp. v. Pictometry Int'l Corp.*, No. 08-816, 2011 WL 1261583 (D. Minn. Mar. 31, 2011) (holding Pictometry did not infringe GEOSPAN's patent), *aff'd* 2012 WL 1994841 (8th Cir. June 5, 2012); *GEOSPAN Corp. v. Pictometry Int'l Corp.*, 731 F. Supp. 2d 858 (D. Minn. 2010) (construing claims).

image is saved along with the calculated geographic coordinates. *Id.* col.3, l.24-25. The camera then takes a second image that also contains the stationary object within the field of view. *Id.* col.3, l.48-51. A computer then calculates the position of the stationary object relative to each corner of the second image. *Id.* col.3, l.54-62. By comparing how the relationship of the stationary object to each corner has changed, a computer program determines a scale factor. *Id.* col.3, l.59-col.4, l.33. This scale factor can be used to determine the relative distance between the two images. *Id.* col.4, l.42-44. When this distance has been determined, new latitude and longitude coordinates can be calculated because the change in latitude and longitude is proportional to the change in distance. *Id.* col.4, l.44-50. These new coordinates are saved to a file along with the second image. *Id.* col.4, l.54-57. A new stationary object may be selected in the second image and used to determine the relative distance between the second and third image – and so forth for each new pair of images. *Id.* col.4, l.40-41 & fig.3. "In this way, a complete map with accurately determined corner coordinates of constituent images can be created and stored in memory in real time. Each image can be retrieved from memory at random and used to compile a map of the surveyed strip of land." *Id.* col.5, l.40-45.[2]

At issue are independent Claims 1 and 16. The parties submitted a Joint Claim Construction Statement (Docket No. 31), identifying several disputed claim terms. The disputed claim terms are bolded.

[2] The patent also notes that "land depicted by the several images can be measured within the images." '365 Patent, col.5, l.48-49. Because a scale factor is calculated, "the size of any sub-portion of land can be calculated by computer simply by identifying the coordinates of the corners of the sub-portion to be measured." *Id.* col.5, l.51-54.

1. A method of **mapping land** comprising:

capturing a plurality of overlapping video images depicting overlapping portions of a continuous strip of land, said images having four corners,

calculating geographic coordinates of said four corners,

storing said images and coordinates real time in a random access storage medium,

retrieving said images and coordinates from said storage medium, and

compiling said images and coordinates to form a map which depicts said strip and identifies longitudinal and latitudinal coordinates of said strip.

16. An **apparatus** for mapping land comprising:

means for capturing a plurality of overlapping video images depicting overlapping portions of a continuous strip of land, said images having four corners,

means for calculating geographic coordinates of said four corners,

means for storing said images and coordinates,

means for retrieving said images and coordinates from said means for storage, and

means for compiling said images and coordinates to form a map which depicts said strip and identifies standard longitudinal and latitudinal coordinates of said strip.

ANALYSIS

I. STANDARD OF REVIEW

Claim construction is a matter of law exclusively for the Court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970 (Fed. Cir. 1995) *aff'd*, 517 U.S. 370 (1996). In construing claims, the Court should determine the "ordinary and customary" meaning of the claim language to a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). To determine how a

person having of ordinary skill in the art ("PHOSITA") would understand a claim term, the Court should "read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314. If the meaning of a claim term to a PHOSITA is not immediately apparent, the Court should look to "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Id.* (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)). The specification, however, is "always highly relevant" and usually "dispositive; it is the single best guide to the meaning of a disputed term." *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

When consulting the specification to clarify claim terms, courts are cautioned against importing limitations from the specification into the claims. *Id.* at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."). The claims, however, "cannot 'enlarge what is patented beyond what the inventor has described as the invention.'" *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1288 (Fed. Cir. 2009) (quoting *Biogen, Inc. v. Berlex Labs., Inc.*, 318 F.3d 1132,

1140 (Fed. Cir. 2003)). A court may reach a "narrower construction, limited to the embodiment(s) disclosed in the specification, when the claims themselves, the specification, or the prosecution history clearly indicate that the invention encompasses no more than that confined structure or method." *Id.* at 1288.

Although the Court can use extrinsic evidence, the Federal Circuit has cautioned that extrinsic evidence is "less significant" and "less reliable" than other factors. *Phillips*, 415 F.3d at 1317-18. Extrinsic evidence includes "expert and inventor testimony, dictionaries, and learned treatises." *Id.* at 1317 (quoting *Markman*, 52 F.3d at 980). A dictionary definition may be relied on in construing claim terms "so long as the dictionary definition does not contradict any definition found in . . . the patent . . . ." *Vitronics*, 90 F.3d at 1584 n.6.

II. MEANS PLUS FUNCTION

A. Construing Claims 1 and 16

GEOSPAN argues that the Court must construe Claims 1 and 16 consistently because all of the language with "the exception of the words 'means for' at the beginning of each step in Claim 16" is the same. GEOSPAN also notes that during prosecution the applicant stated he "added Claim 16 to more particularly point out and distinctly claim the invention . . . . New independent Claim 16 is an apparatus claim similar in scope to method Claim 1." (Decl. of Keiko Sugisaka, Ex. G., File History at PICE000003259-PICE000003260, Oct. 3, 2011, Docket No. 56.)

First, "means for" language, like that used in Claim 16, raises a rebuttable presumption that 35 U.S.C. § 112 ¶ 6 applies and the claim is a means plus function

("MPF") claim. *Inventio AG v. ThyssenKrupp Elevator Ams. Corp.*, 649 F.3d 1350, 1356 (Fed. Cir. 2011). An MPF claim must be "construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112 ¶ 6. Neither party argues that Claim 16 is not an MPF claim.

Because Claim 16 must be construed "to cover the corresponding structure, material, or acts described in the specification and equivalents thereof" and Claim 1 need not be, although the claims must be construed consistently, the meanings of the terms in the claims will likely not be identical. Nor does Pictometry's comparative statement during prosecution mean that Claim 1 is limited to the scope of Claim 16. The statement was not unequivocal or limiting enough to disavow claim scope. *See Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003) ("We have, however, declined to apply the doctrine of prosecution disclaimer where the alleged disavowal of claim scope is ambiguous."). **The Court will, therefore, independently construe Claims 1 and 16.**

B. Construing a MPF Claim

"Claim construction of a means-plus-function limitation includes two steps. First, the court must determine the claimed function. Second, the court must identify the corresponding structure in the written description of the patent that performs that function." *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006) (internal citations omitted); *Cardiac Pacemakers, Inc. v. St. Jude Med. Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002). *See also Patent Claim Construction in the Federal Circuit* § 2:84 (Edward D. Manzo, ed., 2011). "The determination of the corresponding structure of a means-plus-function claim is a determination of the meaning of the 'means'

term, and is a matter of claim construction." *Globetrotter Software, Inc. v. Elan Computer Grp., Inc.*, 236 F.3d 1363, 1367 (Fed. Cir. 2001).

As stated above, use of the word "means" creates a presumption that § 112 ¶ 6 applies. *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 703 (Fed. Cir. 1998). To rebut the presumption, the Court determines "whether the claim as properly construed recites sufficiently definite structure . . . ." *Id.* at 704.

If the presumption is not rebutted, after identifying the claimed function, the Court must determine "what structure, if any, disclosed in the specification corresponds to the claimed function." *Cardiac Pacemakers, Inc.*, 296 F.3d at 1113. "In order to qualify as corresponding, the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function." *Id.* It is a question of law whether the specification fails to disclose a corresponding structure and is, therefore, invalid for indefiniteness pursuant to 35 U.S.C. § 112 ¶ 2. *Id.*

III. PLAIN MEANING

A court should assign claim terms their plain and ordinary "meanings, according to the customary understanding of a person of ordinary skill in the art who reads them in the context of the intrinsic record." *Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1376 (Fed. Cir. 2009).[3] Pictometry repeatedly argues that because the plain and

[3] *See also Microthin.com, Inc. v. SiliconeZone USA, LLC*, 377 F. App'x 8, 12 (Fed. Cir. 2010) ("[C]laim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.") (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002)).

ordinary meaning of the claim terms would be readily apparent to a lay juror, the Court need not undertake claim construction. (*See, e.g.*, Pl.'s Opening Mem. at 14, Docket No. 57 (citing *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997).)

Because the terms are disputed, the Court must construe them. In the case relied upon by Plaintiffs, *U.S. Surgical Corp.*, the parties did not dispute the meaning of the claim terms. 103 F.3d at 1567-58; *Sulzer Textil A.G. v. Picanol N.V.*, 358 F.3d 1356, 1367 (Fed. Cir. 2004) (distinguishing *U.S. Surgical* and noting that in that case the "'plain meaning' [was] recognized and not disputed"). Indeed, the Federal Circuit has consistently held that if the parties dispute a term, the district court must construe it. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008) ("In this case, the 'ordinary' meaning of a term does not resolve the parties' dispute, and claim construction requires the court to determine what claim scope is appropriate in the context of the patents-in-suit."). Finally, a term must be given the meaning it would have to a PHOSITA at the time of the invention, *Phillips*, 415 F.3d at 1313, not a lay juror at the time of the trial. The Court will, therefore, construe the disputed terms, determining the meaning the terms would have to a PHOSITA in 1992.

IV. THE "PRESENT INVENTION"

Generally, the Court should not limit the scope of the claim to the embodiments described in the specification. *See, e.g., Vizio, Inc. v. Int'l Trade Comm'n*, 605 F.3d 1330, 1338-39 (Fed. Cir. 2010) (reaffirming that a specification that enables only one

embodiment does not constitute an unambiguous disclaimer of all other embodiments); *Phillips*, 415 F.3d at 1323. Nevertheless, the use of the phrase "the present invention" may cause a court to limit construction of the claims to the embodiment described in the specification when the embodiment is described as **the** invention. *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007); *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006).[4]

The phrase "the present invention" is used numerous times in this patent's specification. *See* '356 Patent col.1, l.6; col.1, l.51; col.2, l.31; col.2, l.33-34; col.2, l.56-57; col.4, l.63; col.5, l.56; *see also id.* col. 6, l.11-12 (referring to "the invention"). GEOSPAN asks the Court to focus solely on one instance of this term, in the subheading "SUMMARY OF THE INVENTION." *See id.* col.1, l.51.[5] The description in this section, GEOSPAN argues, is the embodiment covered by the patent's claims and, therefore, this embodiment should limit the scope of the invention and the claims. (*See* Def.'s Rebuttal Mem. at 9-10 (citing *Verizon*, 503 F.3d at 1308).)

The Court will not import the limitations of the embodiment described into the Summary of the Invention wholesale**.** First, the description GEOSPAN urges the Court

[4] *See also Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 907 (Fed. Cir. 2004) ("[W]e have held that the embodiments of the invention set forth in the specification constituted the invention itself, in spite of claim language that could, in the abstract, be interpreted more broadly."); 1 Annotated Patent Digest § 5:17.50 (summarizing cases); *Patent Claim Construction in the Federal Circuit* § 2:49 (Edward D. Manzo, ed., 2011) (same).

[5] The section begins: "Briefly described, a mapping and land measurement method and apparatus embodying the present invention involves . . . ."

to focus on begins with the words "briefly described", '365 Patent, col.1, l.50-52, suggesting that it does not describe all the features of the invention "as a whole." *Cf. Verizon*, 503 F.3d at 1308. Second, later in the specification, another description begins "the apparatus of the present invention is also capable of . . ." and describes different features. '365 Patent col.5, l.55-59; *see Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1121, 1137 (Fed. Cir. 2011) (noting that the phrase the "present invention" is not limiting when references are "not uniform" or "where other portions of the intrinsic evidence do not support applying the limitation to the entire patent"). Nevertheless because the specification disclosed only one embodiment, the Court will pay special attention to whether the claims are entitled to a scope broader than that embodiment.

V. CLAIM CONSTRUCTION

A. Claim 1: "mapping land"

Pictometry:	the coordinates of the land have been determined, *i.e.* any point on the land can have its longitude and latitude determined
GEOSPAN:	compiling overlapping video images by using latitude and longitude of the four corners of each image to position the images together to create a two-dimensional map depicting standard longitudinal and latitudinal coordinates of the strip of land
Court's Construction:	making a map of land

The parties dispute the meaning of the claim language "mapping land," found in the preamble Claim 1. Each party suggests a construction that would introduce

limitations and affect claim construction.[6] Generally, however, a preamble is "of no significance to claim construction" but merely states "the purpose or intended use of the invention . . . ." *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999); Harmon *et al.*, *Patents and the Fed. Circuit* § 6.2(a)(i)(2) (10th Ed. 2011). Because the meaning of the term is disputed, claim construction is required. (*See* Part III, *supra*.) Nevertheless, the Court finds that a limiting construction would be inappropriate.

Because the preamble simply states "a purpose or intended use for the invention," it is "not limiting." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). The preamble is not essential to understanding limitations or terms in the claim's body, does not cite steps, and was not relied upon during the patent's prosecution. *See id.* at 808-09. Neither party has presented any evidence that "mapping land" would have any special meaning to a PHOSITA. *See Phillips*, 415 F.3d at 1312 (stating that the words of a claim should be given their ordinary and customary meaning to a PHOSITA at the time of the invention). Nor is there any indication in the specification that the drafter meant something other than the usual meaning of "mapping" for the purposes of this patent. *See Vitronics*, 90 F.3d at 1584 n.6. Consequently, the Court concludes that "mapping land" means **"making a map of land."** This definition is

[6] GEOSPAN suggests a construction for "mapping land" that would limit the claim by adding a requirement for overlapping images and by specifying that it creates a two-dimensional map depicting latitude and longitude. In its brief, Pictometry argues that the plain meaning of the claim term should apply and no claim construction is required. In the claim construction chart, Pictometry suggests tying the definition to the determination of latitude and longitude and attempts to potentially broaden the claim scope by including "any point on the land can have its longitude and latitude determined."

consistent with the way the term is used in the patent, with its common meaning, and with dictionary definitions of mapping.[7]

B. Claim 1: "capturing"

Pictometry:	bringing into digital format either by directly using a digital image or taking an analog image and digitizing it for use
GEOSPAN:	recording overlapping video images in analog or digital format with a video camera
Court's Construction:	recording and, if needed, converting to a digital format

The parties ask the Court to construe "capturing" as used in Claim 1. The claim reads, " . . . **capturing** a plurality of overlapping video images depicting overlapping portions of a continuous strip of land, said images having four corners . . . ." The parties agree that capturing involves recording or collecting the images, but they disagree about whether capturing imports the method of collection from the specification.[8]

[7] Both the Oxford English Dictionary and Webster's Dictionary define mapping as "to make a map of." Oxford English Dictionary, Vol. IX, 349 (1989); Webster's Third New International Dictionary 1379 (1981).

[8] The parties agreed at oral argument that the construction did not need to include the image's format (digital or analog) at the time of collection.

GEOSPAN suggests that the construction should specify that the images are recorded by a video camera. While the structure used to complete a function is important for an MPF claim (*see* Part H, *infra*), it does not appear relevant here.[9]

Pictometry argues that capturing should include digitizing or bringing into a digital format an analog image. Pictometry's argument is somewhat inconsistent with the language elsewhere in the specification: "Video camera **captures** the second video image and sends it to the computer, where it is digitized, formatted, coordinated and then stored in memory, as described above." '356 Patent col.3, l.51-54 (emphasis added).[10] Nevertheless, because it appears from the specification that a non-digital image must be converted to digital format before the geographic coordinates could be calculated,[11] a PHOSITA reading the specification and claims likely would have understood "capturing" to include not only collecting but also converting (if necessary) the image to a digital format. *See id.* col.1, l. 35-37 ("It is a principal object of this invention to provide a . . . apparatus which can create a digital video image of a portion of land from an analog or digital source.") The Court will construe "capturing" as "**recording and, if needed, converting to a digital format**."

[9] GEOSPAN's proposed instruction is also partially redundant with the rest of the claim. The construction would lead to the claim reading something like: recording overlapping video images a plurality of overlapping video images.

[10] *But see* "Video camera creates an analog or digital video signal of the first image. In the preferred embodiment, video camera is also a video CCD Camera. An ordinary video camera may also be used, provided an analog to digital conversion card is in place . . . to convert the analog video signal to a digital representation." '365 Patent, col.2, l. 66-col.3, l.4.

[11] Because the calculating step (*see* Part C, *infra*) involves finding pixel locations, the image must be digitized before the calculation step can occur.

C. Claim 1: "calculating geographic coordinates of said four corners"

Pictometry: Plain Meaning

the coordinates of the four corners of the image can be calculated by an equation that converts the pixel coordinates of the corners to their corresponding geographic locations;

"calculating": the process of solving the equations necessary to determine the geographic coordinates of pixels in the image

"four corners": the geographic coordinates of the pixels residing in the four corners of the image

GEOSPAN: calculating the latitude and longitude of the four corners of each overlapping image by adjusting the latitude and longitude of the corners of each captured image proportional to the relative distance in the direction of travel of the vehicle as identified by the relative position of an identified element appearing in one image to the same element appearing in the next image

Court's Construction: **"geographical coordinates":** X-Y coordinate values describing the location

"said four corners": the points where the outer edges of each image meet and intersect

"calculating": solving the equations and algorithms described in the patent

In sum: Solving the equations and algorithms described in the patent to find the X-Y coordinate values describing the location of the points where the outer edges of each image meet and intersect

1. Geographic Coordinates

Geographic coordinates can include several different systems that describe a location or point using a group of numbers. The most common system uses latitude and

longitude, and this system is mentioned several times in the patent.[12] However, the patent also describes calculating the position of an object in "an X-Y coordinate system." '356 Patent, col.1, l.64. A person having skill in mapping in 1992 would certainly have known of other types of coordinate systems besides latitude and longitude. Consequently, the Court will construe "geographical coordinates" to mean "**X-Y coordinate values describing the location**."

2. Said Four Corners

Pictometry proposes an extremely broad claim construction of "said four corners" – asking the Court to find that the claim includes calculating the geographic coordinates of **any** pixel within the frame, not just the four traditional corners of the image.[13] Pictometry cites to no intrinsic or extrinsic evidence to support this interpretation.

Pictometry's proposed claim construction is contrary to the plain meaning of **said** four corners. Although there could be smaller rectangles with corners within an image, the claim defines the four corners as the corners of the image and then refers to **said** four corners. The Court will, therefore construe the term "said four corners" to have its

[12] For example, the specification states, "Corner coordinates, in latitude and longitude, of the four corners[,]" '356 Patent, col.3, l.9-10, and "the four coordinates corresponding to the corners of the image can be determined by computer by adjusting the latitude and longitude . . . ." *Id.* col.4, l.46-50.

[13] Pictometry argues that the geographic coordinates of the four corners could be calculated by "direct calculation," that is, solving equations or algorithms to find the coordinates of each corner (as described in the specification) or by "indirect calculation," that is solving equations or algorithms to find the coordinates of all points in the image. (Pl.'s Rebuttal Br. at 5.)

common meaning: "**the points where the outer edges of each image meet and intersect**."[14]

3. Calculating

Pictometry also requests a very broad claim construction for "calculating," asking the Court to find that the claim covers the identification of the coordinates of **any** pixel in the image and **any** equation that would allow someone to determine the geographic coordinates of those pixels. GEOSPAN's construction is very narrow, limiting the scope of the claim to **only** one specific method described in the specification.[15]

"Claims must always be read in light of the specification. . . . [T]he specification makes plain what the appellants did and did not invent . . . ." *Phillips*, 415 F.3d at 1315 (quoting *In re Fout*, 675 F.2d 297, 300 (CCPA 1982)). Nothing in the specification explicitly defines calculating, but the specification describes the calculation of geographic coordinates with reference to specific equations and algorithms.[16] *See Transonic Sys., Inc. v. Non-Invasive Med. Techs. Corp.*, 10 Fed. App'x 928, 934 (Fed.

[14] *See, e.g.*, Webster's Third New International Dictionary 507 (1981) ("the point or place where converging line, edges, or sides meet").

[15] GEOSPAN's proposed construction is troubling because the specification also refers to the "calculated geographic coordinates" of the **first** image being saved with the image. '365 Patent, col.3, l.24-25. These coordinates could not have been calculated by referring to a previous image because there is no previous image.

[16] One equation is provided for determining "scale," '356 Patent, col. 3, l.64-col.4, l.33. Once scale is determined, the relative distance between two images is calculated. *Id.* col. 4, l. 42-44. The relative distance is used to calculate the coordinates of the second image. *Id.* col. 4, l.46-50. One algorithm is provided for calculating the coordinates. *Id.* col. 4, l. 53 & Fig. 6. *See also* col. 5, l.34-40 ("The above steps for calculating . . . coordinates for the image can in turn be repeated . . . .").

Cir. 2001) (construing "calculating" to require the use of at least one of the equations set forth in the specification). No language in the specification indicates that the invention encompasses other methods of calculating the coordinates of an image's corners. *See id.*

The specification makes it clear that the invention is a method of calculating the coordinates of images based on their scaled distance from a previous image. Indeed, in the "BACKGROUND OF THE INVENTION" section, the patentee states, it is a "principal object of this invention to provide a method and apparatus for measuring land by accurately scaling the video image of the land." '356 Patent, col. 1, l. 42-44. Because Pictometry does not demonstrate that it would have been apparent to a PHOSITA that other methods than the one claimed were a part of the invention, not limiting the claim scope to the equations and algorithms disclosed would result in the claims "enlarg[ing] what is patented beyond what the inventor has described as the invention.'" *Abbott Labs.*, 566 F.3d at 1288 (internal quotation marks omitted).

Although the Court is aware that the disclosure of a single embodiment should not necessarily limit the claims and limitations, *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1331 (Fed. Cir. 2004), "the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim[,]" *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1382 (Fed. Cir. 2011) (internal quotation marks omitted). As in *Trading Technologies v. eSpeed*, the Court takes "some comfort [with this limitation] . . . from the inventors' use of the term 'the present invention' rather than 'a preferred embodiment' or just 'an embodiment.'" 595 F.3d 1340, 1353 (Fed. Cir. 2010). The

Court also notes that the specification never suggested that other methods of calculating would also allow a PHOSITA to calculate geographic coordinates during collection of the images, and Pictometry did not present any intrinsic or extrinsic evidence that suggests other methods that would have been apparent to a PHOSITA. *See ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1375 (Fed. Cir. 2009).

Because the specification only describes the calculation of geographic coordinates with reference to specific equations and algorithms, the Court will construe "calculating" to mean "solving the equations and algorithms described in the patent." Thus, the contested claim language "calculating geographic coordinates of said four corners" will be construed as "**solving the equations and algorithms described in the patent to find the X-Y coordinate values describing the location of the points where the outer edges of each image meet and intersect.**"

D. Claim 1: "storing said images and coordinates real time"[17]

Pictometry:	Plain meaning Storing the images and coordinates simultaneously
GEOSPAN:	Storing the images and the calculated latitude and longitude of the four corners of each image together at the same time
Court's Construction:	simultaneously storing an image and X-Y coordinate values describing the location of the four corners of that image

In their proposed constructions for "storing said images and coordinates in real time," neither party suggests that "storing" or "images" needs to be construed by the

[17] The full phrase of the claim reads: "storing said image and coordinates real time in a random access storage medium."

Court. GEOSPAN offers a proposed construction for "coordinates" and "real time." Pictometry offers a proposed instruction for "real time."

GEOSPAN suggests that "coordinates" should be construed as "the calculated latitude and longitude of the four corners of each image." For the reasons already discussed (Part C, *supra*), the Court will use the same construction as for "geographical coordinates": the X-Y coordinate values describing the location. However, because it is unclear to what the coordinates refer, the Court will include in its construction "of the four corners of that image."

GEOSPAN suggests construing "real time" to mean "at the same time." Pictometry suggests construing "real time" to mean "simultaneously." The Court finds that these terms are synonymous and will use "simultaneously" because it is more concise. In sum, the Court will construe "storing said images and coordinates real time" as "**simultaneously storing an image and X-Y coordinate values describing the location of the four corners of that image**."

E. Claim 1: "retrieving said images and coordinates"

Pictometry:	Plain meaning The captured images and calculated coordinates are retrieved from the random access storage medium
GEOSPAN:	Retrieving the stored images with the latitude and longitude of the four corners of each image
Court's Construction:	Retrieving the stored images and the X-Y coordinate values describing the location of the four corners of each image

In their proposed constructions for "retrieving said images and coordinates," the parties do not suggest that "retrieving" needs to be construed by the Court.[18] The parties differ in their proposed constructions of "coordinates" and "said images." The Court will use the same construction for coordinates as it uses in Part C, *supra* (*i.e.* "X-Y coordinate values describing the location").

Pictometry suggests "said images" should be construed as "captured images;" GEOSPAN suggests it should be construed as "stored images." Because stored images is more consistent with the language of the claim (*see* Part D, *supra* (construing "**storing** said images and coordinates in real time)), the Court will construe "said images" to be "stored images."

GEOSPAN argues that the Court should substitute "with" for "and" because the image is stored **with** its embedded coordinates. Again, although this limitation is in the specification, *see, e.g.*, col.3, l.42-44, the limitation is not implicit in the claim.[19] The claim language requires that the images and coordinates are stored in "real time" (which the parties agree means simultaneously), but it does not require the coordinates to be stored **in** the video image as GEOSPAN suggests. The Court will, therefore, use "and," not "with" as proposed by GEOSPAN.

[18] Pictometry seems to imply that retrieving must imply "from the random access storage medium." Although "random access storage medium" is included in the previous phrase of the patent, there is no reason to include that limitation in the Court's construction here, and the Court finds that "retrieving" should not imply "from the random access storage medium."

[19] Nor is it implicit in other descriptions of the "present invention." *See* '365 Patent, col.1, l.10 ("calculating on the fly geographic coordinates associated with those portion and storing in real time the images and coordinates in a randomly accessible storage medium").

In sum, the Court will construe "retrieving said images and coordinates" as "**retrieving the stored images and the X-Y coordinate values describing the location of the four corners of each image**."

F. Claim 1: "compiling said images and coordinates to form a map which depicts said strip"

Pictometry:	After the geographic coordinates of the four corners of the images depicting a strip of land have been calculated, the images are arranged such that the images can be compiled into an overall combined map of the area "compiling": the organizing or arranging of the image data to form a map of image data (*i.e.* one or more images that depict the strip of land and allows for the identification of coordinates therein) "map": means a graphical depiction of geographical data which gives the ability to a user to determine geographic location, in this case the depiction being aerial imagery with associated coordinate data
GEOSPAN:	Using the latitude and longitude of the four corners of each overlapping image to position the images together to create a two-dimensional map of the strip of land
Court's Construction:	**"compiling":** assembling **"said images and coordinates":** images and the X-Y coordinate values describing the location of the four corners of each image **In sum:** assembling the images and the X-Y coordinate values describing the location of the four corners of each image to form a map which depicts said strip

The parties ask the Court to construe the phrase "compiling said images and coordinates to form a map which depicts said strip." The Court will define the terms "said images" and "coordinates" consistently with other parts of the same claim. *See*

Parts C and D, *supra.* After removing the redundancy in Pictometry's suggested definition, it suggests "compiling" should be construed as "organizing or arranging." In the claim construction chart, GEOSPAN implicitly suggests that the Court should construe "compiling" as "using . . . to position," but in its briefing it states that the "compiling function is comprehensively described in the specification, and requires using the preceding steps of calculating, storing and retrieving the corner coordinates of each image and then using those coordinates to compile a map of a continuous strip of land." (Def.'s Opening Br. at 29.) That is, GEOSPAN asks the Court to read the limitations of the specification (and some of the other claim steps) into this term. The specification provides little guidance. Only two sentences in the specification (outside the claims) address compiling:

> Each image can be retrieved from memory at random, and used to compile a map of the surveyed strip of land. This method obviates the need for manual assignment of geographic coordinates to the images before compiling.

'365 Patent, col.5, l.41-47. The Court concludes that neither party has presented evidence that this term would have had a special meaning to a PHOSITA at the time of the invention, and it will construe "compiling" to have its ordinary meaning: "assembling."[20]

[20] *See, e.g.*, Webster's Third New International Dictionary 1379 (1981) (defining "compile" as "to collect and assemble . . . .").

Pictometry suggests in its briefing that the meaning of the term "map" is plain and does not require further construction.[21] GEOSPAN urges the Court to construe a map as "a two dimensional map." Both parties define map in this context as a map with further limitations, yet neither party demonstrated that "map" would have meant something different to a PHOSITA reading the patent than it would mean to a lay juror today. Indeed, in their suggested constructions of the claims, both parties use the term "map" without further definition. On the current evidence, the Court finds that construing "map" is not necessary to elucidate the meaning of the phrase it has been asked to construe.[22] The Court also holds that neither party has demonstrated that a PHOSITA would read the patent to impose the limitations suggested by the parties into the definition of map.[23] Therefore the Court will construe "compiling said images and coordinates to form a map which depicts said strip" as "**assembling the images and the**

[21] In the claim construction chart, Pictometry states that a map should mean either "an overall combined map of the area" or "a graphical depiction of geographical data which gives the ability to a user to determine geographic location, in this case the depiction being aerial imagery with associated coordinate data."

[22] Neither party asked the Court to construe "map" – rather, the parties asked the Court to construe the phrase "compiling said images and coordinates to form a map which depicts said strip." *Cf. O2 Micro*, 521 F.3d at 1361.

[23] That is, the Court declines to construe map to mean "two-dimensional map" as proposed by GEOSPAN. Similarly, the Court declines to find that "map" means "a depiction of aerial imagery associated with coordinate data." The Court notes that if the record becomes more developed and the parties provide new evidence regarding this term's ordinary meaning to a PHOSITA, *see Apex, Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1374 (Fed. Cir. 2003), and that the proper scope of "map" is disputed, *see O2 Micro*, 521 F.3d at 1360-61, the Court may reconsider the issue.

X-Y coordinate values describing the location of the four corners of each image to form a map which depicts said strip."

G. Claim 16

Claim 16 claims, *inter alia*, a "means for retrieving said images and coordinates from said means for storing" and a "means for compiling said images and coordinates to form a map which depicts said strip." Use of the word "means" creates a presumption that § 112 ¶ 6 applies.[24] *See* Part II.B, *supra*. As explained below, because the Court finds no structure corresponding to the claimed functions of "retrieving" or "compiling" in the specification, **Claim 16 is invalid for indefiniteness**. The Court will, therefore, decline to construe the other disputed claim terms.

1. Function and Corresponding Structure: "means for retrieving"

Claim 16 claims a "means for retrieving said images and coordinates from said means for storing." Pictometry attempts to claim that the "means for retrieving" are "any device or method capable of obtaining the stored images and calculated coordinates from the storing means." At oral argument, GEOSPAN argued that the written description identified no structure to retrieve the images and coordinates, and the Court finds none. If the specification fails to disclose a structure to perform the function, then the claim is invalid. *Cardiac Pacemakers, Inc.*, 296 F.3d at 1114 ("If, however, this inquiry reveals

[24] Neither party attempted to rebut the presumption that § 112 ¶ 6 applies, and the Court finds that the claim does not recite a structure for either "retrieving" or "compiling." Therefore, the structures must be found in the specification, if at all.

that no embodiment discloses corresponding structure, the claim is invalid for failure to satisfy the definiteness requirement of § 112, ¶ 2.").

The only mention the specification makes of retrieving the images and coordinates (outside of the claims) is when it states, "Each image can be retrieved from memory at random, and used to compile a map of the surveyed strip of land." '365 Patent, col.5, l.43-45. The Court concludes that neither this vague statement nor the specification as a whole identifies a structure capable of retrieving the images.[25] Therefore, **the Court finds this phrase of Claim 16 indefinite.**

2. Function and Corresponding Structure: "means for compiling"

Claim 16 claims a "means for compiling said images and coordinates to form a map which depicts said strip and identifies standard longitudinal and latitudinal components of said strip." Pictometry again attempts to claim "any device or method" capable of completing the claimed function. At oral argument, GEOSPAN argued that the written description provided no structure capable of completing the claimed function.

As noted, *supra*, the only mention the specification makes of compiling the images (outside of the claims) is when it states, "Each image can be retrieved from memory at random, and used to compile a map of the surveyed strip of land." *Id.* That is, the

[25] Although a computer – mentioned elsewhere in the specification – certainly **could** retrieve the images, the specification does not describe a computer or any other structure doing so or state that a computer could do so, nor does it identify a program that would perform the retrieval.

specification does not identify a single structure as capable of compiling the images.[26] The Court concludes that this **phrase of Claim 16 is indefinite.**

Because the Court finds multiple phrases of Claim 16 indefinite, it concludes that the claim is invalid. *See Cardiac Pacemakers, Inc.*, 296 F.3d at 1113 ("It is a question of law whether the specification fails to disclose a corresponding structure and is, therefore, invalid for indefiniteness pursuant to 35 U.S.C. § 112, ¶ 2.").

ORDER

Based on the foregoing, all the files, records, and proceedings herein, the Court hereby **ADOPTS** the construction of the claim terms as set forth in the Memorandum accompanying this Order.

DATED: August 17, 2012
at Minneapolis, Minnesota.

s/ John R. Tunheim
JOHN R. TUNHEIM
United States District Judge

[26] Again, a computer certainly **could** compile the images, but the specification does not describe it doing so or identify a program that would perform the compilation.